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REMARKS

In paragraphs 1 and 2 of the Office Action Applicant's election without traverse of the invention of Group I, Claims 25 through 30, in the reply filed on February 14, 2007 is acknowledged. Claims 31 through 40 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made without traverse in the reply filed on February 14, 2007.

Responsive hereto, Applicant confirms its election of claims 25-30 for prosecution in this application, although independent claim 25 may be generic to independent claim 31 with regard to the inventive features of the present invention.

In paragraph 3 of the Office Action it is indicated that the title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed, and the following title is suggested: --A Method of Manufacturing a Magnetic Head Having a Short Pole Yoke Length--.

Responsive hereto, Applicant has amended the title as suggested in the Office Action.

In paragraphs 4 and 5 of the Office Action claims 25 through 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, stating:

> "In Claim 25, it is unclear from the disclosure what is meant by the phrase of "fabricating a fill layer...at said ABS surface" (lines 7-8). Figures 18 through 20 of the applicant(s) drawings and the specification (pages 15 to 16) clearly discuss layer 228 as being the fill layer. Although element 92 is labeled as the ABS, the ABS has not yet been formed when fill layer 228 is formed. Element 92 is merely an imaginary line that shows where the ABS will be formed at a later time. But when the fill layer is formed, the ABS is not. So how is it possible for "portions of said fill layer are disposed at said ABS surface", when at the time the fill layer is formed, the ABS is not. The above phrase is misleading and confusing, rendering the claim as being vague and indefinite.
>
> In Claim 30, the phrase of "said etch stop layer" (lines 1-2) lacks positive antecedent basis."

Responsive hereto, Applicant has amended independent claim 25 to positively recite the air bearing surface (ABS) location of the magnetic head during fabrication. Applicant respectfully submits that this amendment cures the indefiniteness of claim 27. Additionally, Applicant has amended dependent claim 28 for similar reasons.

Regarding the objection to dependent claim 30, Applicant has amended independent claim 25 to include the etch stop layer limitation, such that positive antecedent basis for claim 30 is created.

Applicant therefore respectfully submits that the amendments to the claims have satisfied the grounds of rejection set forth in paragraphs 4 and 5.

In paragraphs 6 and 7 of the Office Action claims 25 through 27, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Santini 6,172,848 in view of Sasaki 6,195,872, stating:

> "Santini discloses a method for fabricating a magnetic head comprising: fabricating a write head above substrate base Si including: fabricating a first magnetic pole (e.g. 610, 612 in Figs. 21C and 21D); fabricating an induction coil (e.g. 628); fabricating an electrical insulating layer (e.g. 630 in Fig. 21W) above the first magnetic pole such that no portion of the electrical insulation layer is disposed at an ABS; fabricating a fill layer (e.g. 642) around the electrical insulation layer such that portions of the fill layer are disposed at the ABS; and fabricating a second magnetic pole (e.g. 640 in Fig. 21AA) above the induction coil.
>
> Regarding Claim(s) 26, Santini further teaches that the electrical insulation layer is composed of a substance of Si02 (e.g. silicon dioxide, col. 12, lines 7-9).
>
> Regarding Claim(s) 27, 29 and 30, Santini shows in one embodiment that the induction coil is a single layer induction coil (Fig. 15 or Fig. 21U), and that the fill layer (e.g. 642) is made of Al203 (e.g. alumina, col. 15, lines 49-50). Layer 626 or 340 is also made of Al203 (e.g. alumina) and can broadly be read as an "etch stop layer" since the claims require no etching, or no etching steps.
>
> Santini teaches substantially all of the limitations of the claimed manufacturing method except that the induction coil is fabricated in the insulating layer (as required in Claim 25, line 9).
>
> Sasaki shows a coil forming process (in Figs. 13A to 15A) where an electrically insulating layer (e.g. 37) is fabricated and then subsequently, an induction coil (e.g. 40) is formed within insulating layer. Both Sasaki and Santini form art recognized equivalent induction coils, which have the same purpose and same function of operation within each of their magnetic heads.
>
> Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Santini by utilizing the coil forming process of Sasaki, which is to fabricate the induction coil within the electrically insulating layer, to form art recognized equivalent induction coils, which have the very same purpose and function within each magnetic head."

Applicant respectfully traverses this ground of rejection and asserts that neither Santini nor Sasaki teach an induction coil formation method as recited in the claims, as is next discussed.

Regarding amended independent claim 25, it recites a magnetic head fabrication method in which (1) an etch stop layer is fabricated above the first magnetic pole, and (2) an electrical insulation layer is fabricated directly upon the etch stop layer, and (3) wherein the electrical insulation layer is not fabricated at the ABS surface location of the magnetic head, and (4) an induction coil is fabricated within the electrical insulation layer.

Regarding the teachings of Santini '848, specifically, as is seen in Fig. 21W and 21X, the induction coil traces 68 are fabricated within an insulation layer 630 (Fig. 21W) where the insulation layer 630 is disposed at the location of the ABS (see Fig. 21X). Applicant therefore respectfully submits that amended independent claim 25 recites limitations that are not taught by nor obvious from the teachings of Santini '848.

Regarding Sasaki '872, it likewise fails to teach a magnetic head fabrication method in which the induction coil is fabricated within an electrical insulation layer that is not disposed at the ABS location. Specifically, as depicted in Figs. 13-15, the induction coil 40 is fabricated within an insulation layer 37 that is disposed at the ABS location, as is seen in Fig. 13B, 14B and 15B. Additionally, Sasaki shows that the electrical insulation layer 37 in which the induction coil 40 is fabricated is disposed directly upon the first magnetic pole 36, whereas amended independent claim 25 requires an etch stop layer to be fabricated above the first magnetic pole, where the electrical insulation layer is fabricated directly upon the etch stop layer.

Regarding the combined teachings of Santini '848 and Sasaki '872, it is therefore seen that neither reference teaches the fabrication of an induction coil within an electrical insulation layer where the electrical insulation layer is not fabricated at the ABS location of the magnetic head. Therefore, Applicant submits that the combined teachings of the prior art can not render obvious these untaught features; specifically, there is no teaching, nor suggestion, nor motivation for one skilled in the art to create the fabrication method of the present invention as recited in amended independent claim 25 from the combined teachings of the prior art. Applicant therefore respectfully submits that amended independent claim 25 recites limitations that are not obvious from the cited prior art.

Regarding dependent claims 26, 27, 29 and 30, Applicant submits that these claims recite further limitations that are not obvious from the cited prior art; alternatively, Applicant asserts that these dependent claims are allowable in that they depend from an allowable base claim, amended independent claim 25.

In paragraph 8 of the Office Action claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Santini in view of Sasaki, as applied to Claim 25 above, and further in view of Sato 2002/0176206, stating:

> "Santini, as modified by Sasaki, discloses the claimed manufacturing method as relied upon above in Claim 25, further including that the induction coil can be made up of a multiple induction coil (e.g. 417, 418 in Fig. 17), and that each induction coil has a separate insulation layer (e.g. 426, 428). Sasaki shows that one induction coil (e.g. 417) has a separate insulation layer (e.g. 426) and that another induction coil (e.g. 418) also has another separate insulation layer (e.g. 428), with each of the insulation layers having a portion that is not formed at the ABS. The electrical insulation layer (e.g. 428) is formed within the fill layer (e.g. overcoat layer). However, Santini does not teach that the other of the electrical insulation layers (e.g. 426) is formed within a separate fill layer.
>
> Sato shows that a fill layer (e.g. 18 in Fig. 6) disposed at the ABS and can be fabricated to enable subsequent patterning of the electrical insulation layer (e.g. 15 in Fig. 7), where the insulation layer is formed within the fill layer (Fig. 8).
>
> It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Santini, by adding a separate fill layer to the first (or bottom) pole, as taught by Sato, to positively enable the insulating layer to be formed within the fill layer."

Applicant respectfully traverses this ground of rejection and asserts that amended dependent claim 28 recites subject matter that is not obvious from the prior art, and alternatively, that dependent claim 28 is allowable in that it depends from an allowable base claim, amended independent claim 25.

Specifically, amended dependent claim 28 requires that each of two induction coils be fabricated within separate electrical insulation layers, where no portion of either electrical insulation layer is fabricated at the ABS location.

With regard to the teachings of Sato '206, it teaches in Figs. 1 and 2 that the insulation layer 15 within which the lower induction coil is fabricated is disposed at the ABS location (as shown in Fig. 1), and with regard to Figs. 18 and 19, Sato provides no related teaching, in that the insulation layer 8 in which the upper induction coil is fabricated (Fig. 19) is not depicted within the ABS view of Fig. 18. Applicant therefore respectfully submits that Sato fails to teach the limitations set forth in dependent claim 28 of fabricating an induction coil within an electrical insulation layer that is not disposed at the ABS location. Therefore, given the teachings of Sato '206, of insulation layers being disposed at the ABS location, Applicant submits that it is not obvious from the teachings of Sato to fabricate two induction coils within insulation layers that

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are both not disposed at the ABS location. Applicant therefore further submits that neither Santini '848, nor Sasaki '872, nor Sato '206 teach this claim limitation, nor do they provide any suggestion or motivation for this claimed limitation in a method for fabricating a magnetic head. Applicant therefore respectfully submits that dependent claim 28 includes further limitations that are not obvious from the prior art, and alternatively, that dependent claim 28 is allowable in that it depends from an allowable base claim, amended independent claim 25.

Applicant notes that new claims 41-45 have been added in this amendment, and Applicant respectfully asserts that these dependent claims recite further limitations that are not obvious from the prior art, and alternatively that these dependent claims are allowable in that they depend, either directly or indirectly from allowable independent base claim 25.

Having responded to all of the paragraphs of the Office Action, and having amended the claims accordingly, Applicant respectfully submits that the Application is now in condition for allowance. Applicant therefore respectfully requests that a Notice of Allowance be forthcoming at the Examiner's earliest opportunity. Should the Examiner have any questions or comments with regard to this amendment, a telephonic conference at the number set forth below is respectfully requested.

Respectfully submitted,

Dated: July 19, 2007

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